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ABSTRACT

In this booklet, the highlights of Report No. 3 (see UD 018 835) on Compensatory Education (CE) are summarized in text and tables. Results reported include the following: (1) proportionally, CE selection is highest among the poor for both math and reading; (2) CE selection is proportionally higher for low achievers; (3) the greatest number of students selected for CE come from the low-income and low achiever group; (4) teacher judgment plays a large role in selection; (5) a significant relationship exists between students' economic status and educational achievement; (6) students from impoverished homes attend one week less school than other students; and (7) family economic status is related to the number of hours spent in reading classes of various sizes. In addition, effects of non-academic programs are evaluated and the progress of the Sustaining Effects Study on CE is outlined. (Author/WI)

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OVERVIEW OF REPORT #3: STUDENT ECONOMIC AND EDUCATIONAL STATUS AND RECEIPT OF EDUCATIONAL SERVICES

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TECHNICAL REPORT #3 FROM THE STUDY OF THE SUSTAINING EFFECTS OF COMPENSATORY EDUCATION ON BASIC SKILLS

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2. Breglio, Vincent J.; Hinckley, Ronald H.; and Beal, Richard S. Student's Economic and Educational Status and Selection for Compensatory Education. DECIMA RESEARCH, Santa Ana, CA, January 1978.

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A PRECIS OF THE SUSTAINING EFFECTS STUDY AND AN OVERVIEW OF THE PRESENT VOLUME

THE SUSTAINING EFFECTS STUDY

In response to a large number of questions relevant to educational policy, SDC has undertaken the task of examining compensatory education (CE) in depth. Compensatory education will be examined in kind, quantity and environment; its sustained effects and its generality. This intention is embraced by the large study: Evaluation of the Sustaining Effects of Compensatory education on Basic Skills, or briefly stated, The Sustaining Effects Study. This thorough study will eventuate in a multi-volume serial publication of independent and interdependent reports, organized according to the following sub-studies:

The Longitudinal Study. In the Longitudinal Study, the educational achievements of a large number of children will be assessed in the fall and spring for three consecutive years. The children will take an achievement test in reading and mathematics, a functional literacy test, and a measure of attitude towards school and towards themselves as students. The amount and nature of instruction in reading and mathematics will be determined for each student four times during the school year. In addition, teachers and principals will report summarily on their theories and thoroughly on their practices of instruction and teaching. Thus, it will be possible not only to assess student growth over a three-year period, but to relate this growth to the kinds and amounts of instruction being received.

The schools in the study were drawn from three different groups. The **Representative Sample** of schools is a sample carefully drawn to represent all of the nation's public schools having some of the grades one through six. A second group of schools, the **Comparison Sample**, is composed of schools that have large proportions of students from high-poverty-level homes, but do not receive special funds to offer compensatory-education services. The third group is the **Nominated Sample**, composed of schools that were nominated because their instructional programs were thought to have promise as being unusually effective for low-achieving students. During the first operational year of the study, data have been collected from 328 schools and about 118,000 students.

The Cost/Effectiveness Study. Information is being obtained on the resources and services to which each student is exposed during reading and mathematics instruction. Upon the basis of this information, the cost estimates will be generated. Because the effectiveness of the instructional programs will be determined as part of the Longitudinal Study, it will then be possible to relate measured effectiveness to the measured cost of each program.

The Participation Study. The purpose of the Participation Study is to determine the relationships among economic status, educational need, and instructional services received. The educational achievement of the students and the services they receive will be obtained in the Longitudinal Study, but the refined measures of economic status will be obtained in the Participation Study. A random sample of over 15,000 students was drawn from the schools

in the first-year Representative Sample and visits were made to the homes of these students. During the visits, information was collected on the economic level of the home and on the parents' attitudes towards their child's school and learning experiences. Thus, the level of student achievement and services received can be related to the economic level of the home from which the student comes.

The Summer Study. The Sustaining Effects Study includes an examination of the effectiveness and cost-effectiveness of summer school programs attended by the students of the SES. RMC Research, responsible for conducting the summer study, is investigating a series of policy questions relating to summer school. Programmatic information about the 1977 summer school experiences of the SES students is being combined with the broader SES data base. The resource cost model, developed for the regular-year cost-effectiveness studies, is being adapted to the needs of the summer school study.

The Successful Sites Study. The major objective of the in-depth study is to identify and describe the instructional practices and contexts that appear to be effective in raising the reading and math achievements of educationally disadvantaged students. In-depth observational and interview data will be collected from approximately 50 schools that are also participating in the Sustaining Effects Study. High-poverty schools will be the focus of the study since they generally have high concentrations of entering educationally disadvantaged pupils and are most in need of both compensatory education monies and successful compensatory practice models.

OVERVIEW OF THE PRESENT VOLUME

This is the third technical report in a series emanating from the Study of the Sustaining Effects of Compensatory Education on Basic Skills. This report extends the findings relating to students' economic and educational status and selection for compensatory education (CE) as reported in the second technical report. Chapter 1 introduces the principal variables: family economic status, reading and math CE selection status, teacher judgment of student CE need, the kinds and amounts of educational services offered to and received by students, exposure to non-academic CE services, and early childhood educational experiences. Chapter 2 presents a detailed examination of the relationships among economic status and achievement as selection factors for reading and math CE programs. The effect of teacher judgment of CE need on selection for CE programs also appears in this chapter. Chapter 3 reports on the educational services offered to and received by elementary school children. The number of weeks of school attended, the amount of reading and math instructional services offered students and the total hours of reading and math instruction actually received during the school year are provided. Chapter 4 presents an analysis of the hours of reading and math services received by students according to teacher type (regular teacher, non-regular teacher, special teacher, aide, or tutor, and class activities independent of a teacher) and instructional setting (classes with 14 or more students, classes with 2 to 13 students, and situations where the student engages in learning apart from other students). Chapter 5 examines non-academic compensatory services (guidance, counseling, health and nutrition) and early childhood educational experiences (pre-primary programs such as kindergarten, Head Start, day care centers, etc.). Chapter 6 is a summary of both the second and third technical reports reviewing the principal findings about family economic status, achievement and CE. Chapters 2 to 6 need not be read in sequence. With Chapter 1 as an introduction, attention may be focused on any other chapter independent of the order of presentation. Chapters 3 and 4, however, should probably be read in conjunction with one another.

THE PRINCIPAL RESEARCH VARIABLES CONSIDERED IN THIS REPORT

Family Economic Status is defined in terms of those students counted or not counted using the current Title I allocation criteria. Counted students are from families whose 1976 income falls below the official poverty level or who receive AFDC payments. Institutionalized, neglected, or delinquent children or foster children attending public schools are also included. These students, counted by using the allocation criteria, number 4.2 million, and make up nearly 21 percent of the student population in grades one through six. *Student Educational Status* is defined in terms of the Comprehensive Test of Basic Skills for math and reading. Percentile scores developed especially for this study are used for reading and math. Reading and math achievement is usually presented in terms of a quartile distribution. *Reading and Math CE Selection Status* is defined in terms of whether or not a student has been selected to participate in a Title I or non-Title I CE program. Overall, about 2.6 million students are selected for Title I reading and 1.4 million for Title I math programs. Another 2.2 million students are selected for non-Title I funded CE services in reading and 1.9 million in math. Altogether about 25 percent of the population is selected for some form of reading or math CE (15 percent in the case of Title I selectees). *Students*

Rated by Teacher as Needing CE Services is defined in terms of those students judged only needing reading services (10%), those only needing math services (3%), and those needing both reading and math services (20%).

Attendance is defined in terms of the number of weeks a student is present in school during the year. It is a product of the length of the school year and absenteeism. On the average, students spend 33.8 weeks a year in school. The *Total Hours of Reading Offered* a student during the school year is about 246, of which the average student attends 232 hours *(Total Hours of Reading Attended). The Total Hours of Math Offered* is 174 and the *Total Hours of Math Attended* is 165. The larger part of reading (134 hours) and math (101 hours) learning is spent being instructed by a Regular teacher. Next comes learning *Independent of a Teacher* (78 hours for reading and 54 hours for math) and, finally, work with a *Non-Regular Teacher* (19 hours for reading and 8 hours a year for math). The size of the instructional group provides three variables for analysis. Most math instruction is conducted in a large group setting – classes with *14 or More Students* (77 hours). Only 59 hours of reading are conducted in these size groups. Most reading is done in small groups (93 hours in *Classes with 2 to 13 Students*). Only 31 hours of math instruction per year takes place in these smaller classes. The second largest instructional setting for both reading and math is *Individual Instruction or Learning,* where the student studies apart from other students either with or without an instructor. Eighty hours of reading and 55 hours of math occur in this setting.

Non-Academic Compensatory Services is defined in terms of student participation in guidance and counseling programs and health and nutrition programs. About 3 percent of the sample participated in compensatory guidance and counseling programs and 5 percent of all students surveyed for this report received compensatory health and nutrition services. Lastly, about 88 percent of the sample of students participated in pre-primary *Early Childhood Educational Experiences.* This variable indicates whether a child has participated in one or more of the following programs: Kindergarten (85 percent participation rate), Nursery/Day Care Center (11%), Pre-School (8%), Head Start (7%) and pre-primary Summer School (5%).

RESULTS OF THE PARTICIPATION STUDY

Household data were obtained from the parents of over 15,000 elementary school children. The survey instrument contained 166 informational items. These items have been linked to data items from other SES instruments administered in the schools and are reported in terms of several major areas of interest. The results focus on national reading and math CE selection rates and receipt of educational services at the student level only. Inferences about how Title I will reach different student groups must be made with caution, since no fixed national criteria for the selection of students and schools currently govern the program. The highlights of each area of interest are reported below.

Economic Status and Selection for CE. On a proportional basis, CE selection is higher among the poor than the non-poor for both reading and math. Students from poor families are selected more frequently for Title I programs than for non-Title I funded services. About 61 percent of the poor children in the nation are not selected to participate in any reading CE program and about 71 percent are not selected for participation in any math CE

program. About 20 percent of all non-poor children are selected for reading CE and about 13 percent for math CE; hence, in absolute numbers the non-poor selectees exceed the poor, both for Title I and for Other CE services. The estimated percentages and frequencies of students selected for CE by economic status are shown below. In viewing these results, it should be understood that selection for Title I at the student level is based not on economic status but on educational achievement.

Economic Status and CE Selection Status	READING		MATH	
	Projected Percentages	Projected Frequencies	Projected Percentages	Projected Frequencies
Poor/AFDC				
Title I Selectees	25	1,062,000	16	669,000
Other CE Selectees	14	573,000	13	531,000
No CE	61	2,546,000	71	2,981,000
Total Poor/AFDC	100	4,181,000	100	4,181,000
Non-Poor				
Title I Selectees	9	1,487,000	5	760,000
Other CE Selectees	10	1,583,000	9	1,361,000
No CE	81	12,755,000	87	13,704,000
Total Non-Poor	100	15,825,000	101	15,825,000

Economic Status and Selection for CE. CE selection is proportionately higher for low achievers than for high achievers. Using the percentile measure for educational status suggests that most of the CE selectees, particularly Title I selectees, score below the national median (50th percentile). More students who achieve above the national median in reading and math are selected for Other CE programs than are selected for Title I programs, as shown below.

Educational Status and CE Selection Status	READING		MATH	
	Projected Percentages	Projected Frequencies	Projected Percentages	Projected Frequencies
25th Percentile and Below				
Title I Selectees	27	1,327,000	14	683,000
Other CE Selectees	17	836,000	13	630,000
No CE	56	2,698,000	73	3,508,000
Total in Bottom Quarter	100	4,861,000	100	4,821,000
26th to 50th Percentile				
Title I Selectees	17	855,000	9	457,000
Other CE Selectees	12	630,000	10	506,000
No CE	71	3,636,000	80	3,898,000
Total in Second Quarter	100	5,121,000	99	4,861,000

Educational Status and CE Selection Status	READING		MATH	
	Projected Percentages	Projected Frequencies	Projected Percentages	Projected Frequencies
51st to 75th Percentile				
Title I Selectees	5	274,000	4	219,000
Other CE Selectees	8	427,000	8	413,000
No CE	86	4,382,000	88	4,590,000
Total in Third Quarter	99	5,083,000	100	5,222,000
76th Percentile and Above				
Title I Selectees	2	109,000	2	76,000
Other CE Selectees	5	262,000	7	337,000
No CE	93	4,570,000	92	4,689,000
Total in Top Quarter	100	4,941,000	101	5,102,000

Economic Status, Educational Status and Selection for CE. The combined measures of economic and educational status differentiate between students selected and not selected for Title I and other CE services. The greatest proportion selected for Title I and Other CE is from the low-income and low-achievement group. However, half of these students are not selected for any CE reading services and two-thirds receive no math CE services, as indicated in the following tabulation.

Economic Status, Educational Status, and CE Selection Status	READING		MATH	
	Projected Percentages	Projected Frequencies	Projected Percentages	Projected Frequencies
Poor/AFDC and Below 50th Percentile				
Title I Selectees	32	964,000	20	573,000
Other CE Selectees	15	471,000	14	402,000
No CE	53	1,626,000	66	1,918,000
Total Poor/AFDC in Bottom Half	100	3,061,000	100	2,893,000

The group with the next highest selection rates includes the educationally but not economically needy, followed by the economically but not educationally needy, as shown below.

Economic Status, Educational Status, and CE Selection Status	READING		MATH	
	Projected Percentages	Projected Frequencies	Projected Percentages	Projected Frequencies
Non-Poor and Below 50th Percentile				
Title I Selectees	18	1,226,000	8	574,000
Other CE Selectees	14	996,000	11	734,000
No CE	68	4,724,000	81	5,497,000
Total Non-Poor in Bottom Half	100	6,946,000	100	6,805,000
Poor/AFDC Above 50th Percentile				
Title I Selectees	9	100,000	8	100,000
Other CE Selectees	9	98,000	9	120,000
No CE	82	922,000	83	1,068,000
Total Poor/AFDC in Top Half	100	1,120,000	100	1,288,000

The group with the lowest proportion of students selected for CE is neither low-income nor low-achieving. It should be noted in the tabulation presented below that the selection rate for Other CE has not dropped off as dramatically as it has for Title I.

Economic Status, Educational Status, and CE Selection Status	READING		MATH	
	Projected Percentages	Projected Frequencies	Projected Percentages	Projected Frequencies
Non-Poor and Above 50th Percentile				
Title I Selectees	3	268,000	2	191,000
Other CE Selectees	7	580,000	7	621,000
No CE	90	8,031,000	91	8,208,000
Total Non-Poor in Top Half	100	8,879,000	100	9,020,000

Teacher Judgment of CE Need. Teacher judgment plays an important role in selection of CE: regardless of the economic or achievement category those judged needy are more likely to be selected for CE than those judged as not needy. The following tabulation presents a good example of the impact of teacher judgment on selection for CE.

Economic Status, Educational Status, Teacher Judgment of CE Need and CE	Percentage for Reading	Percentage for Math
Poor/AFDC Bottom Half Judged Needing CE		
Title I Selectees	44	30
Other CE Selectees	19	17
No CE	37	53
Total	100	100
Poor/AFDC Bottom Half Judged Not Needing CE		
Title I Selectees	9	8
Other CE Selectees	10	10
No CE	81	82
Total	100	100

Economic and Educational Status. A significant relationship exists between students' economic status and educational achievement. Seventy-four percent of the poor achieve below the national median in reading and 70 percent achieve below the median in math, as shown in the tabulation below.

Economic Status and Educational Status	Percentage for Reading	Percentage for Math
Poor/AFDC		
Bottom Quarter	43	40
Second Quarter	31	30
Third Quarter	17	21
Top Quarter	9	10
Total Poor/AFDC	100	101
Non-Poor		
Bottom Quarter	20	20
Second Quarter	24	23
Third Quarter	27	28
Top Quarter	29	29
Total Poor/AFDC	100	100

School Attendance, Reading and Math Services Offered and Attended. Poverty has a significant relationship with the amount of time children spend in school. Students from impoverished homes attend one week less school than other students, as indicated in the following tabulation.

Economic Status	Average Number of Weeks of School Attended
Poor/AFDC	33
Non-Poor	34

Economic Status and CE Selection Status are strongly related to the number of hours of reading and math offered students during the school year. The following results indicate that poor Title I selectees are offered the greatest number of hours of reading and math instruction. For reading, Other CE selectees are offered the second highest number of hours of instruction, but for math those not selected for any CE are offered more hours than those selected for Other CE.

Economic Status and CE Selection Status	Average Number of Hours of Instruction Offered	
	Reading	Math
Poor/AFDC		
Title I Selectees	287	190
Other CE Selectees	253	161
No CE	245	169
Non-Poor		
Title I Selectees	243	182
Other CE Selectees	255	162
No CE	238	163

Because of the low attendance among poor students they do not differ significantly from the non-poor students in the extent to which they attend reading and math programs. For instance, while poor Title I selectees are offered 44 more hours of reading than non-poor selectees, they only attend 5 more hours of reading instruction. In the later grades, race is an important predictor of the number of hours of reading and math offered and attended. Minority students are offered and attend more hours of instruction in these two subjects than do whites.

Reading and Math Instructional Settings. In reading there is no basic difference between the poor and the non-poor in the hours of instruction from a regular teacher. However, the poor receive more hours of instruction from a non-regular teacher across achievement, CE selection status, race, and grade. On the other hand, the non-poor receive more hours than the poor of reading independent of a teacher. So poor students generally receive more hours of instruction in reading by a non-regular teacher, and the non-poor spend more time independent of teacher instruction, as the following tabulation shows.

Type of Teacher	Average Hours of Reading Instruction Received: Poor/AFDC	Non-Poor
Regular Teacher	134	134
Non-Regular Teacher	32	16
Independent of a Teacher	71	80

Family economic status is related to the hours spent in reading classes of various size. For Title I selectees, and students not selected for any CE, more hours are spent in large group reading by the poor than the non-poor students. The situation is reversed for students selected for Other CE, as the following tabulation indicates.

Economic Status and CE Selection Status	Average Hours of Reading Instruction in Various Size Class Settings: 14 or More Students	2 to 13 Students	Apart from Other Students
Poor/AFDC			
Title I Selectees	55	146	62
Other CE Selectees	30	132	72
No CE	67	83	78
Non-Poor			
Title I Selectees	47	139	71
Other CE Selectees	37	128	76
No CE	64	79	84

Basically, the non-poor in each CE selection category receive more hours of instruction apart from other students than the poor, who receive the bulk of their reading instruction in group settings, particularly small classes.

In the area of math instruction the overall effects of family economic status are quite similar to those for reading. The poor spend just slightly more time learning math from a regular teacher than the non-poor. As with reading, the poor receive more hours of instruction from a non-regular teacher than the non-poor. These results are highlighted in the following tabulation.

Type of Teacher	Average Hours of Math Instruction Received: Poor/AFDC	Non-Poor
Regular Teacher	105	101
Non-Regular Teacher	15	7
Independent of a Teacher	52	56

No significant difference exists on the basis of family economic status for the hours of math received in large instructional groups and in the area of learning apart from other students. However, in the case of instruction in small groups, the poor consistently receive more hours of service than the non-poor across all CE selection categories as shown below.

Economic Status and CE Selection Status	Average Hours of Math Instruction in Various Size Class Settings: 14 or More Students	2 to 13 Students	Apart From Other Students
Poor/AFDC			
Title I Selectees	71	75	44
Other CE Selectees	51	59	51
No CE	81	33	55
Non-Poor			
Title I Selectees	70	64	48
Other CE Selectees	53	50	59
No CE	81	25	57

For both reading and math, Title I selection is associated with above average hours of instruction by a non-regular teacher and a small group setting. The amount of time spent by Title I selectees in these instructional circumstances varies by achievement level. Low achievers spend the most time, high achievers the least. So, while some high achievers are selected for Title I services, the actual amount of services they receive is more comparable to other high achievers than other Title I selectees. As the following tabulation suggests, actual receipt of services appears to be based more on achievement for these students than on designation for Title I services.

Subject, Title I Selection and Achievement	Average Hours of Instruction Received: Non-Regular Teacher	Class With 2-13 Students
Reading Title I Selectees		
Bottom Quarter	68	142
Second Quarter	66	145
Third Quarter	51	130
Top Quarter	42	141
Math Title I Selectees		
Bottom Quarter	44	75
Second Quarter	42	70
Third Quarter	29	56
Top Quarter	12	34

Non-Academic Compensatory Services. More poor students than non-poor students are exposed to non-academic compensatory services, particularly health and nutrition, as the following tabulation reveals.

Economic Status	Percentage Receiving Services: Guidance and Counseling	Health and Nutrition
Poor/AFDC	3.3	12.4
Non-Poor	2.5	2.8

Early Childhood Experiences. A greater proportion of non-poor are exposed to early childhood experiences, particularly kindergarten. Still, in the areas of Head Start and Summer School, more poor children experience the programs than the non-poor. The following tabulation shows the differences by economic status.

Early Childhood Programs	Percentage Receiving Early Childhood Educational Experiences: Poor/AFDC	Non-Poor
Kindergarten	74	87
Nursery School or Day Care	7	12
Pre-School	5	9
Head Start	14	5
Summer School (Pre-Primary)	8	4
Early Childhood Exposure (One or more of the above)	81	90

The lack of early childhood experiences is associated with low achievement, particularly for the poor, as reflected in the tabulations below. The pattern for math is virtually identical to that presented for reading.

Economic Status and Achievement	Early Childhood Educational Exposure: Yes (%)	No (%)
Poor/AFDC Reading Achievement		
Bottom Quarter	40	51
Second Quarter	31	32
Third Quarter	19	11
Top Quarter	10	5
Total	100	99
Non-Poor Reading Achievement		
Bottom Quarter	19	29
Second Quarter	24	29
Third Quarter	28	24
Top Quarter	30	18
Total	101	100

Students who do not experience early childhood educational programs are more likely than those who do experience these programs to be selected for Title I, as shown in the following tabulations. (Percentages are not directly combinable due to dual classification.)

Economic Status and Early Childhood Educational Exposure	Percentage Selected for Title I	
	Reading	Math
Poor/AFDC		
Experienced Early Childhood Educational Programs	24	15
Did Not Experience Early Childhood Educational Programs	34	21
Non-Poor		
Experienced Early Childhood Educational Programs	9	5
Did Not Experience Early Childhood Educational Programs	13	7

This description of the educational services received by the nation's elementary school children in terms of their family economic status give only a flavor of the results as reported in the complete text.

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